

REMARKS

Claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 are pending in the application.

The Applicants respectfully request the Examiner to reconsider earlier rejections in light of the following remarks. No new issues are raised nor is further search required as a result of the changes made herein. Entry of the Amendment is respectfully requested.

35 USC 112 First Paragraph Rejection of Claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26

The Office Action rejected claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 as allegedly failing to comply with the written description requirement of 35 USC 112. In particular, the recited "common back plane" and "common back plane means" allegedly does not have adequate support in Applicants' originally filed specification.

Claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 are amended herein to delete the previously recited "common back plane" and "common back plane means", making the rejection of claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 under 35 USC 112 now moot. The Applicants respectfully request the rejection of claims 1-3, 5-8, 10-12, 14-17, 19-21 under 35 USC 112 be withdrawn.

Claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 over Nakamura

In the Office Action, claims 1-3, 6, 8, 10-12, 15, 17, 19-21, 24 and 26 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,606,678 to Nakamura ("Nakamura"), with claims 5, 7, 14, 16, 23 and 25 rejected under 35 U.S.C. §103(a) as allegedly being obvious over Nakamura. The Applicants respectfully traverse the rejection.

Claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 recite a method and apparatus using a first half bridge circuit comprising a first DMA circuit and a second half bridge circuit comprising a second DMA circuit.

Nakamura discloses a PCI-PCI bridge for connecting a primary PCI bus to a secondary PCI bus (Abstract). The PCI-PCI bridge allows the connection of a notebook type personal computer to a docking station through a cable (Nakamura, col. 5, lines 1-10).

Although Nakamura discloses a PCI-PCI bridge, Nakamura fails to disclose or suggest any of the components within the system have DMA capability, much less a PCI half bridge circuit comprising a DMA circuit, as recited by claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26.

A half bridge circuit comprising a DMA circuit has significant advantages over the cited prior art. DMA allows one component to read/write data directly into another component's memory. Direct read/write operations greatly increase data transfer speed eliminating intermediate components needed to otherwise perform such operations. Thus, Applicants' claimed features have advantages that are not disclosed or suggested by the cited prior art.

Accordingly, for at least all the above reasons, claims 1-3, 5-8, 10-12, 14-17, 19-21 and 23-26 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 1-3, 10-12, 14, 19-21 and 23 over Lange

In the Office Action, claims 1-3, 10-12, 14, 19-21 and 23 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over U.S. Patent No. 6,457,091 to Lange et al. ("Lange"). The Applicants respectfully traverse the rejection.

Claims 1-3, 10-12, 14, 19-21 and 23 recite a method and apparatus using a first half bridge circuit comprising a first DMA circuit and a second half bridge circuit comprising a second DMA circuit.

Lange appears to rely on a high speed connector 112 to connect a first half bridge PCI circuit and a second half bridge PCI circuit (Fig. 4). The high speed connection is disclosed as being a serial gigabit Ethernet link (Lange, col. 4, lines 1-12).

Although Lange discloses a high speed connector 112 to connect a first half bridge PCI circuit and a second half bridge PCI circuit, Lange (Like Nakamura) fails to disclose or suggest any of the components within the system have DMA capability, much less a PCI half bridge circuit comprising a DMA circuit, as recited by claims 1-3, 10-12, 14, 19-21 and 23.

Moreover, "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). Lange (and Nakamura) discloses a system and method that provide the bandwidth needed for its intended purpose. Thus, there is not suggestion within Lange (nor Nakamura) to add DMA capability to the PCI bridge circuit to facilitate the transfer of data within the system.

Accordingly, for at least all the above reasons, claims 1-3, 10-12, 14, 19-21 and 23 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 6, 15 and 24 over Lange in view of Nakamura

In the Office Action, claims 6, 15 and 24 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Lange in view of Nakamura. The Applicants respectfully traverse the rejection.

Claims 6, 15 and 24 are dependent on claims 1, 10 and 19 respectively, and are allowable for at least the same reasons as claims 1, 10 and 19.

Claims 6, 15 and 24 recite a method and apparatus using a first half bridge circuit comprising a first DMA circuit and a second half bridge circuit comprising a second DMA circuit.

As discussed above, neither Lange nor Nakamura disclose or suggest use of DMA for any of the components within the system, much less a PCI half bridge circuit comprising a DMA circuit, as recited by claims 6, 15 and 24.

Thus, Lange modified by the disclosure of Nakamura would still fail to disclose or suggest a PCI half bridge circuit comprising a DMA circuit, as recited by claims 6, 15 and 24.

Accordingly, for at least all the above reasons, claims 6, 15 and 24 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 7, 16 and 25 over Lange in view of AAPA

In the Office Action, claims 7, 16 and 25 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Lange in view of Applicants' Admitted Prior Art ("AAPA"). The Applicants respectfully traverse the rejection.

Claims 7, 16 and 25 recite a method and system utilizing a half bridge circuit that is field programmable.

The Examiner relies on AAPA to disclose use of an FPSC half bridge (Office Action, page 6). The Applicants respectfully disagree.

The Examiner alleges that use of a FPSC for a PCI half bridge is old and well-known allegedly evidenced by the acknowledged prior art (Office Action, page 6). However, the AAPA fails to disclose or suggest use of a FPSC for a PCI half bridge. AAPA mentions a FPSC related to vendor independent and low cost for PCI solutions.

The second mention of a FPSC in the Applicant's specification is related to the Applicants' "embodiment in accordance with the principles of the present invention utilizing two half bridge circuits to connect to PCI segments.", i.e., not in the AAPA. Thus, AAPA fails to disclose or suggest use of a FPSC for use with a PCI half bridge circuit, contrary to the Examiner's allegation.

Claims 7, 16 and 25 are dependent on claims 1, 10 and 19 respectively, and are allowable for at least the same reasons as claims 1, 10 and 19.

Claims 7, 16 and 25 recite a method and apparatus using a first half bridge circuit comprising a first DMA circuit and a second half bridge circuit comprising a second DMA circuit.

AAPA fails to disclose or suggest use of DMA for any purpose, much less a PCI half bridge circuit comprising a DMA circuit, as recited by claims 7, 16 and 25.

As discussed above, Lange fails to disclose or suggest use of DMA for any of the components within the system, much less a PCI half bridge circuit comprising a DMA circuit, as recited by claims 7, 16 and 25.

Thus, Lange modified by AAPA would still fail to disclose or suggest a PCI half bridge circuit comprising a DMA circuit, as recited by claims 7, 16 and 25.

Accordingly, for at least all the above reasons, claims 7, 16 and 25 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,



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